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Research Note

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Teacher Discourse During Planning Time: A Novel Methodology for Studying Teachers' Beliefs

Teachers' beliefs about learning and instruction are difficult to measure accurately, yet they provide a lens for understanding the thinking that underlies important curricular and pedagogical decisions that are made in the classroom (Kagan, 1992). Self-reports are problematic because they are often inaccurate representations of teachers' core instructional beliefs (Gill, Ashton, & Algina, 2004). In this study, I analyzed teachers' discourse during team planning time to uncover their implicit beliefs about mathematics learning and instruction. Although teacher discourse is a common method for studying teachers' beliefs about learning, such studies have generally observed teachers during their teaching or via interviews (Dickson, 2005; Edelsky, Smith, & Wolfe, 2002; Hanrahan, 2006). The present study's focus on discourse during teachers' planning time represents a novel methodology for studying the pedagogical beliefs that underlie teachers' rationales for their curriculum decisions. Results from a pilot study of middle school teachers' discourse during planning time are presented to illustrate the types of core beliefs about mathematics learning and instruction revealed in teachers' planning time discourse.

Method and Procedure

I conducted a qualitative case study of four grade 8 mathematics teachers in a suburban middle school in the southern United States. XMS serves grades 6 to 8 students, 28% of whom are minorities. Many of the policies and practices implemented by XMS are those that characterize exemplary middle schools including block scheduling and team planning time (George & Alexander, 1993). I observed the teachers during their daily planning time over the course of the fall semester at XMS using audiotape and field notes. I conducted domain analysis of the transcripts (Spradley, 1980).

Results

A partial list of some of the more relevant belief domains is presented with examples to support each.

1. Teachers' beliefs about pedagogical content knowledge.
   a. To teach multiplication and division for Math 8 students, use worksheets: "Now if I was gonna teach this normally, I would make up a worksheet on multiplication."

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   b. Having students check their work is important but students hate doing it, so you have to force them to do it: "And they have to check it. OK? They have to check it. And it will be like pulling teeth. They are not gonna want to do it, and you're gonna tell them that they are gonna do it cause // As far as you're concerned, there are five steps.… And if you force it into them, they will do it."
2. Beliefs about general pedagogical knowledge.
   a. It's not good to plan too far ahead: "I don't want to plan any more [for today], because something always happens."
   b. It's good to reinforce students' memorization with candy:
   Ms. C: Should've given out M&Ms [representing the mnemonic: multiplication = monomials] though—
   Ms. B: Yeah, really to make it really good—
   Ms. C: To reinforce it.
3. Beliefs about subject matter knowledge.
   a. Wondering whether students really need to know about solving inequalities: "Solving inequalities. (Whispers to self) Do they really need to know how to do this? (Louder voice) I guess; it's nothing, nothing weird. (Convincing herself) OK, so inequalities."
   b. Making a table means calculating something: "They always want to say that make a list and make a table are the same thing. And make an organized list, mine wanted [pause], but I always thought with a table you had to be calculating something, as opposed, you know, 'cause they wanted to just draw lines and they called it a table."
4. Beliefs about students' reasoning.
   a. Certain letters in pre-algebra can deceive students if they have been associated in the past with particular formulas: "They added 'em and multiplied by 2. 'Cause they saw *p* and they thought, *perimeter."*
   b. Students do not understand estimation: "I recall that they put down estimation, and then they worked out the problem … don't you? That's not right, is it? … They give an exact answer and they say they estimated."
5. Beliefs about students' behaviors.
   a. Students need time to check their work, and this does not come naturally to them: "I think what's gonna happen is they need more time to sit down and actually do it and you need to check it to make sure they are checking their work."
   b. If honors students have trouble with an activity, then the activity is much too hard for the rest of the math classes and must be modified: "You're gonna flip when you find out what it takes for them [Algebra I students] to draw that to begin with. 'Cause my honors kids had trouble."
6. Beliefs about textbooks.
   a. Objectives should be specific but are not: "Ms. B: (reading from text) Objective: To understand and use place value.
   J: That's not very specific."

   b. Textbook problems can be needlessly confusing: "The next section is, like, rounding, and it's the worst rounding. If I recall correctly, it's not round a number to a place, it's, 'What number when you round it to the next place will be 80?'"
8. Beliefs about including or omitting particular activities in the team's lesson plans.
   a. Because the activity is cool: "Now, that would be a cool thing to end the problem-solving unit. I think. So that would be a good thing to do on Friday for algebra and anybody else really."
   b. Because it is too hard: "And the, the variables and expression activity we did for Algebra was good but it was too hard. [Looking at textbook] And these are much simpler."

Conclusion

This pilot study revealed that teachers' collaborative planning time can be a suitable location to collect data on teachers' implicit instructional beliefs that may be inaccessible through self-report. Teachers' normally hidden planning process was rendered visible and hence recordable. Further research is needed on discovering whether working in teams might be a powerful means of correcting teachers' misunderstandings (pedagogical and subject matter). A second line of inquiry concerns whether teams entrench certain behaviors and practices among teachers that may not be in the students' best interests.

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